Patent claims:

1. Ceramic material, characterized in that it has an HV10 hardness of not more than 15.5 GPa and an E modulus at room temperature of less than 330 GPa and contains 0.2 to 5 wt.% of carbon particles, the carbon particles having a maximum particle size of 5 μm.

2. Ceramic material according to claim 1, characterized in that the content of carbon particles is 0.2 to 3 wt.%.

3. Ceramic material according to claims 1 to 2, characterized in that the density of the material corresponds to at least 98.5 % of the theoretical density.

4. Ceramic material according to claims 1 to 3, characterized in that it has an RT flexural strength of at least 750 MPa, a fracture toughness of at least 5.5 Mpa $m^{1/2}$ and a Poisson ratio or transverse contraction coefficient at 25 °C of ≤ 0.3.

5. Ceramic material according to claims 1 to 4, characterized in that it has no macroscopic defects larger than 20 μm and/or optical heterogeneities larger than 50 μm.

6. Ceramic material according to claims 1 to 5, characterized in that it is a material based on silicon nitride or zirconium dioxide.

7. Ceramic material according to one of claims 1 to 6, characterized in that it is a material based on silicon nitride and the material additionally comprises carbide, nitride, carbonitride, boride and/or silicide compounds of elements of groups IVB, VB and VIB of the periodic table, of silicon and/or of iron,

where the maximum size thereof does not exceed 10 μm and the maximum concentration thereof is < 50 vol.%.

8. Process for the preparation of a ceramic material according to one of claims 1 to 7, wherein the raw materials are subjected to wet grinding and one or more organic additives are added, and then subjected to drying and granulation, shaping, thorough heating of the organic additives and a sintering process, characterized in that the conditions are chosen such that carbon particles are separated out and no macroscopic defects larger than 20 μm and/or optical heterogeneities larger than 50 μm are formed.

9. Process according to claim 8, characterized in that to avoid the formation of macroscopic defects larger than 20 μm and/or optical heterogeneities larger than 50 μm, the suspension formed during wet grinding is sieved over a magnetic separator and fine sieve/fine filter having a maximum sieve opening/filter pore size of 50 μm.

10. Process according to claim 9, characterized in that Si_3N_4 powder and sintering auxiliaries, as raw materials, optionally with the addition of a dispersing auxiliary, are processed to a slip, the slip is subjected to wet grinding and polyacrylates, polyvinyl alcohols, polyglycols and/or polyvinylpyrrolidone are added to the slip as organic additives, the mixture formed is then subjected to a drying and granulation and a shaping, the drying being carried out at temperatures below 200 °C, the organic additives are then heated thoroughly at temperatures of between 100 and 400 °C for a duration of 0.5 to 4 h in air or between 100 and 800 °C for a duration of 0.5 to 4 h in an inert atmosphere or in vacuo and, finally, the thoroughly heated shaped body formed is sintered in a two-stage process, wherein in the first stage the shaped body is treated for 0.5 to 5 h at a temperature of up to 2,000 °C under an N_2 or inert gas pressure of 1 to 50 bar and in the second stage it

is treated for 0.5 to 2.5 h at a temperature of up to 2,000 °C under an N_2 or inert gas pressure of 50 to 2,500 bar.

11. Process according to claim 8 or 9, characterized in that ZrO_2 powder and sintering auxiliaries, as raw materials, optionally with the addition of a dispersing auxiliary, are processed to a slip, the slip is subjected to wet grinding and polyacrylates, polyvinyl alcohols, polyglycols and/or polyvinylpyrrolidone are added to the slip as organic additives, the mixture formed is then subjected to a drying and granulation and a shaping, the drying being carried out at temperatures below 250 °C, the organic additives are then heated thoroughly at temperatures of between 100 and 400 °C for a duration of 0.5 to 4 h in air or between 100 and 800 °C for a duration of 0.5 to 4 h in an inert atmosphere or in vacuo and, finally, the thoroughly heated shaped body formed is sintered in a two-stage process, wherein in the first stage the shaped body is treated for 0.5 to 5 h at a temperature of up to 1,700 °C under an N_2 or inert gas pressure of 1 to 50 bar and in the second stage it is treated for 0.5 to 2.5 h at a temperature of up to 1,700 °C under an N_2 or inert gas pressure of 50 to 2,500 bar.

12. Use of a ceramic material according to one of claims 1 to 7 as roller bodies in bearings and other components subjected to impact as well as shaped articles.